

US EPA Update

ASARCO HAYDEN PLANT SITE

March 12 and 13, 2013

AGENDA

1. Welcome and Introductions
2. Superfund Process
3. Residential Yard Cleanup Update
4. Current Status of Superfund Investigation
5. Risk Update

Superfund Process

- 1. Preliminary Assessment
- 2. NPL Listing Process
- 3. Remedial Investigation/Feasibility Study
 - Risk Assessment
- 4. Record of Decision
- 5. Remedial Design/Remedial Action
- 6. Construction Completion

Removal action



Background- EPA Involvement

- ◆ 2006 - Phase I Investigation begins and site qualifies for the Superfund National Priorities List (NPL).
- ◆ 2008-2009 – Removal and Replacement of Residential soil.
- ◆ 2008-2012 - Phase 2 Remedial Investigation Workplan Development.
- ◆ 2013 - Phase 2 Remedial Investigation work starts.

Residential Yard Cleanup

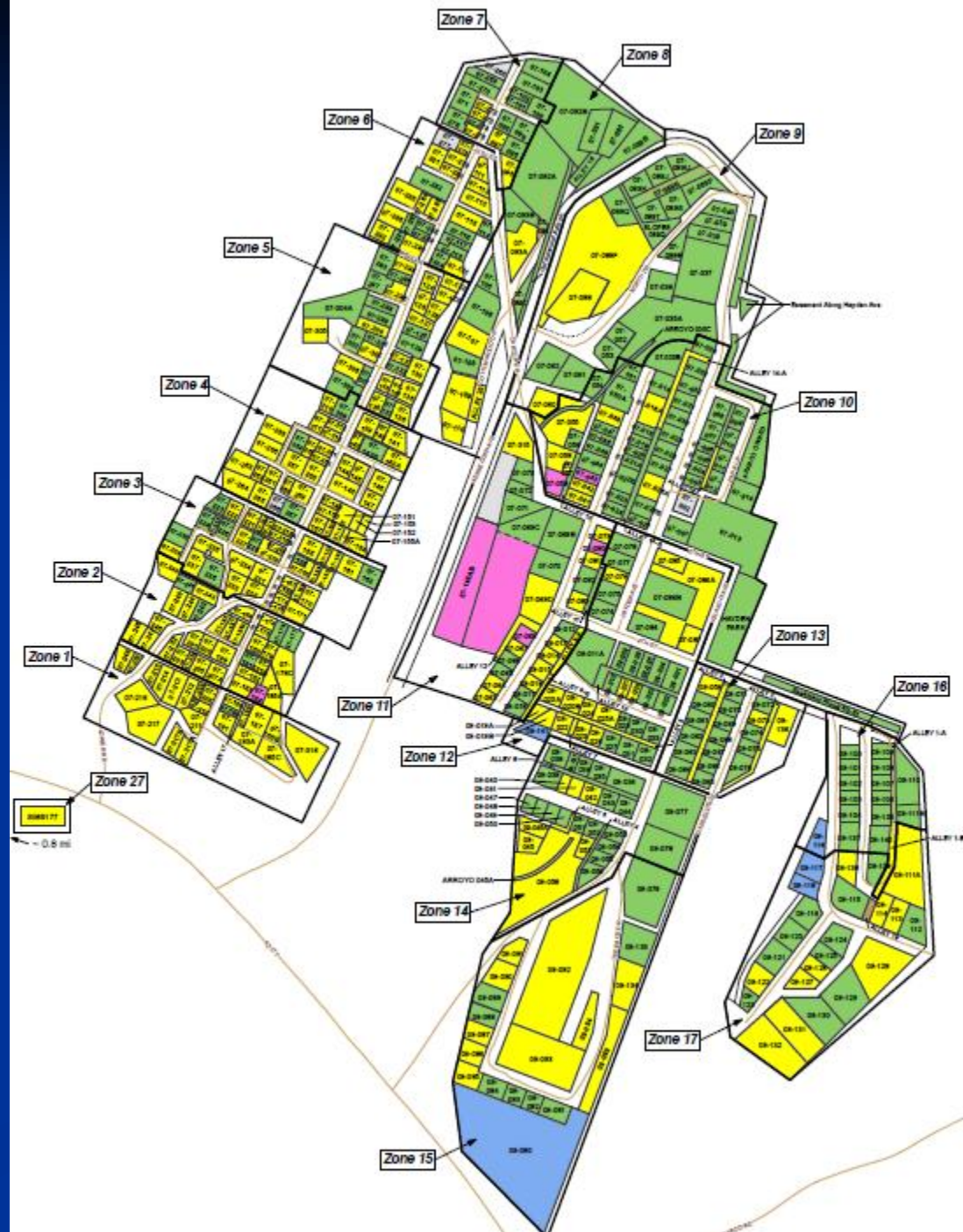
Parcels on both towns

- Total number: 658
- Total Sampled: 649
- Total Cleaned up: 266



Residential Yard Cleanup

- EPA/ADEQ oversight
- EPA tracked and approved cleanup of individual properties.



Sewer Replacement

- Entire sewer replacement by city underway
- Trenching occurring across remediated areas
- Care being taken to not expose contaminated soil
- Water to suppress dust



Sewer Replacement

- EPA and Asarco overseeing excavations to assure yard soil replacement is not undone and yard soil remains protective.



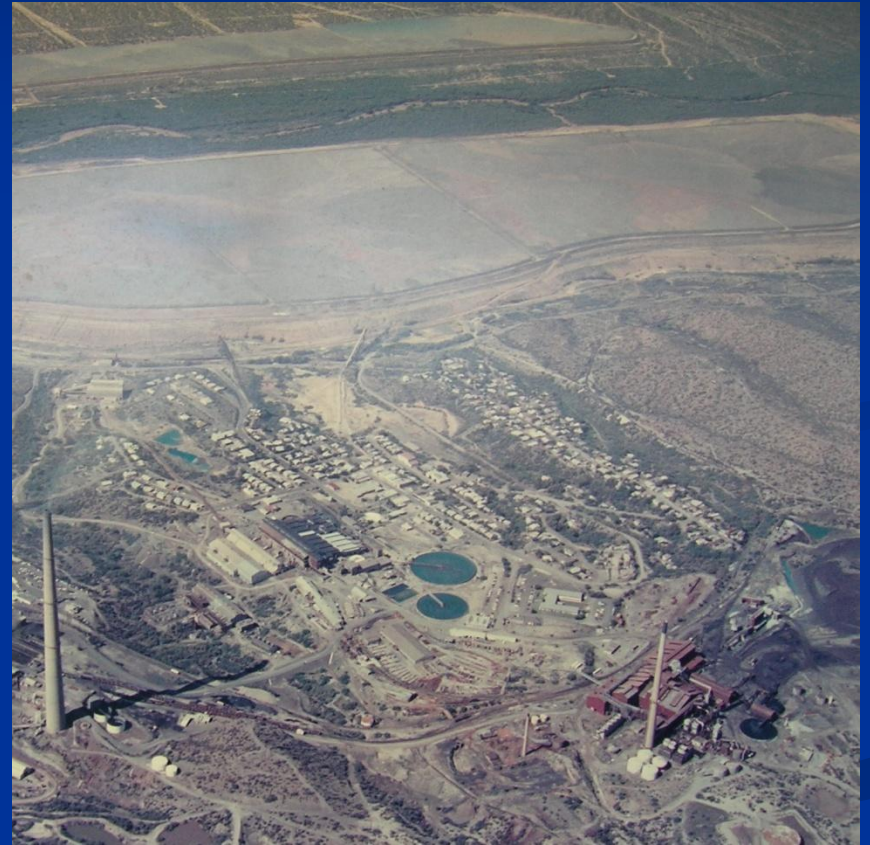
Remedial Investigation

- Objectives:
 - Determine the nature and extent of contamination
 - Gather enough information to determine a remedy



Remedial Investigation

- Asarco will conduct investigation under EPA oversight.
- Asarco will conduct investigation according to EPA written workplan.
- Investigation includes river water, stormwater, groundwater, soil, and air.



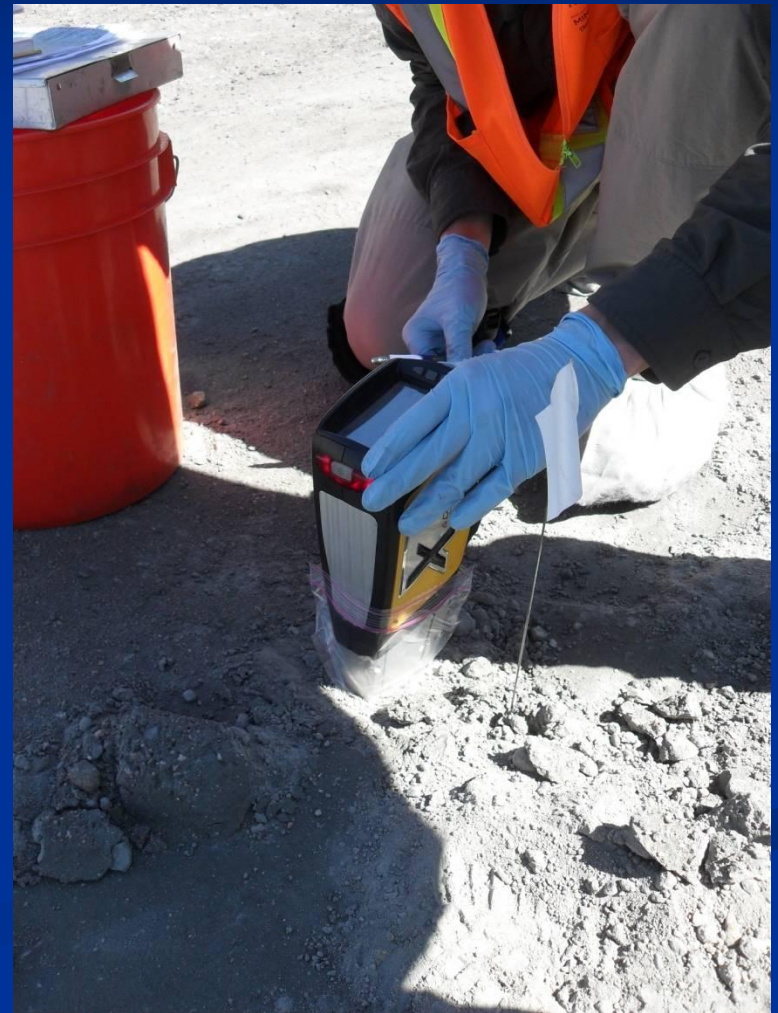
Remedial Investigation

- Phase 2 Investigation will assess the site to determine the extent of contamination from the smelter/concentrator and look at options for addressing the contamination.
- Investigation Areas:

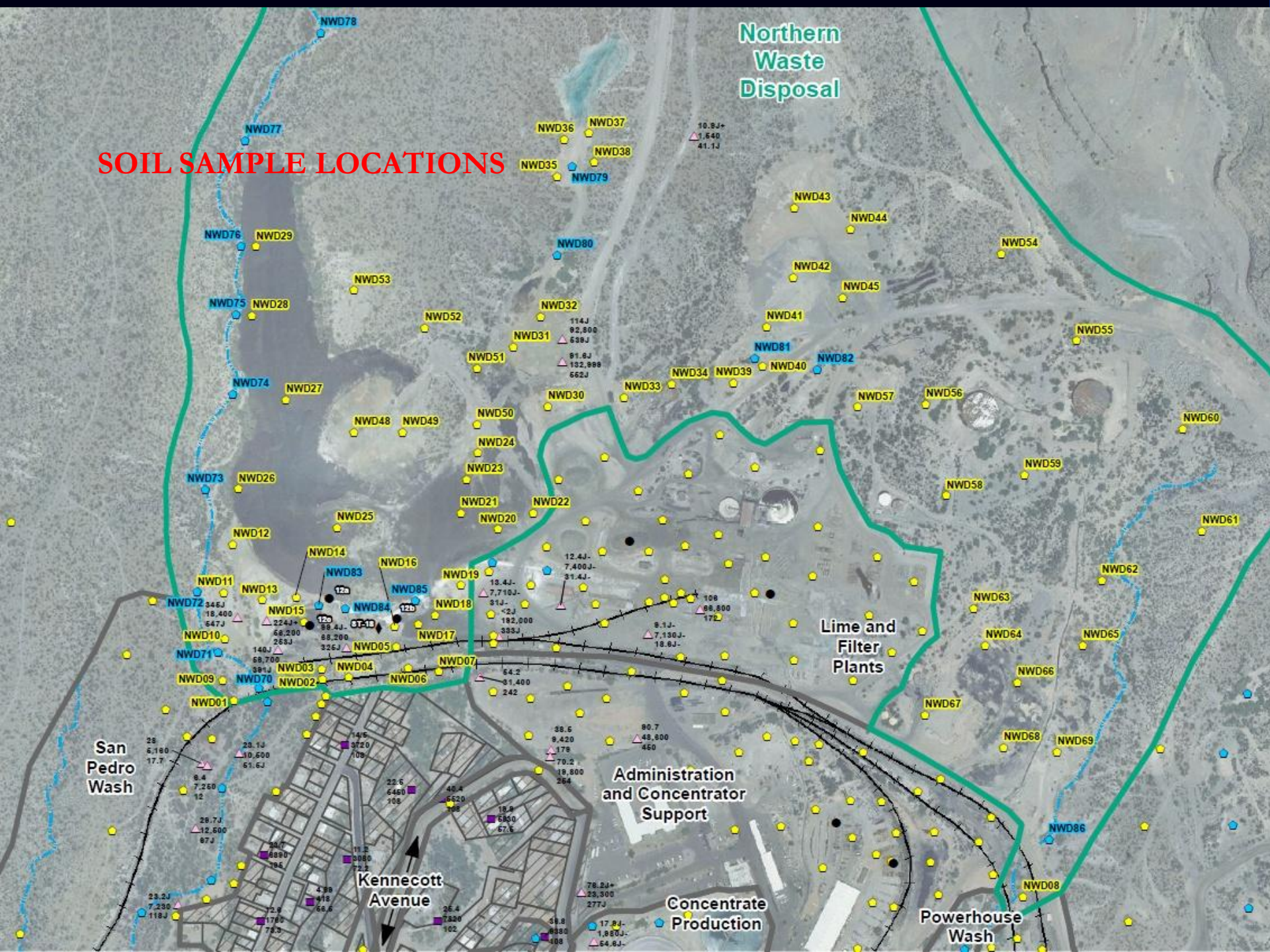
Sampling	Work plan requirements
Soil	877 locations
Groundwater	36 wells (6 of which are new) quarterly testing for at least 2 years
River water	19 locations on Gila and San Pedro Rivers twice a year for 2 years
Stormwater	14 locations
Air	35 locations for at least 2 years

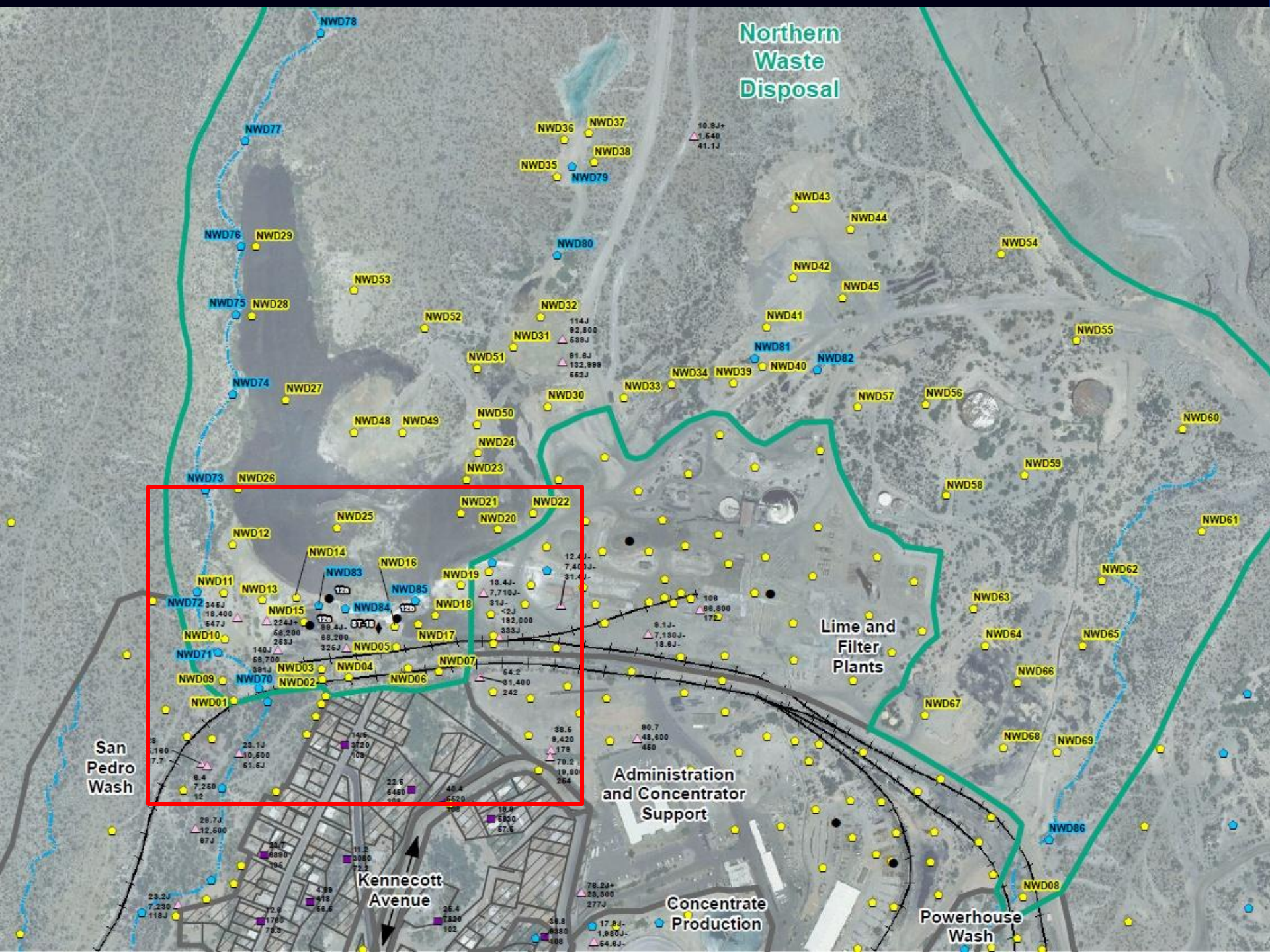
Remedial Investigation Soil

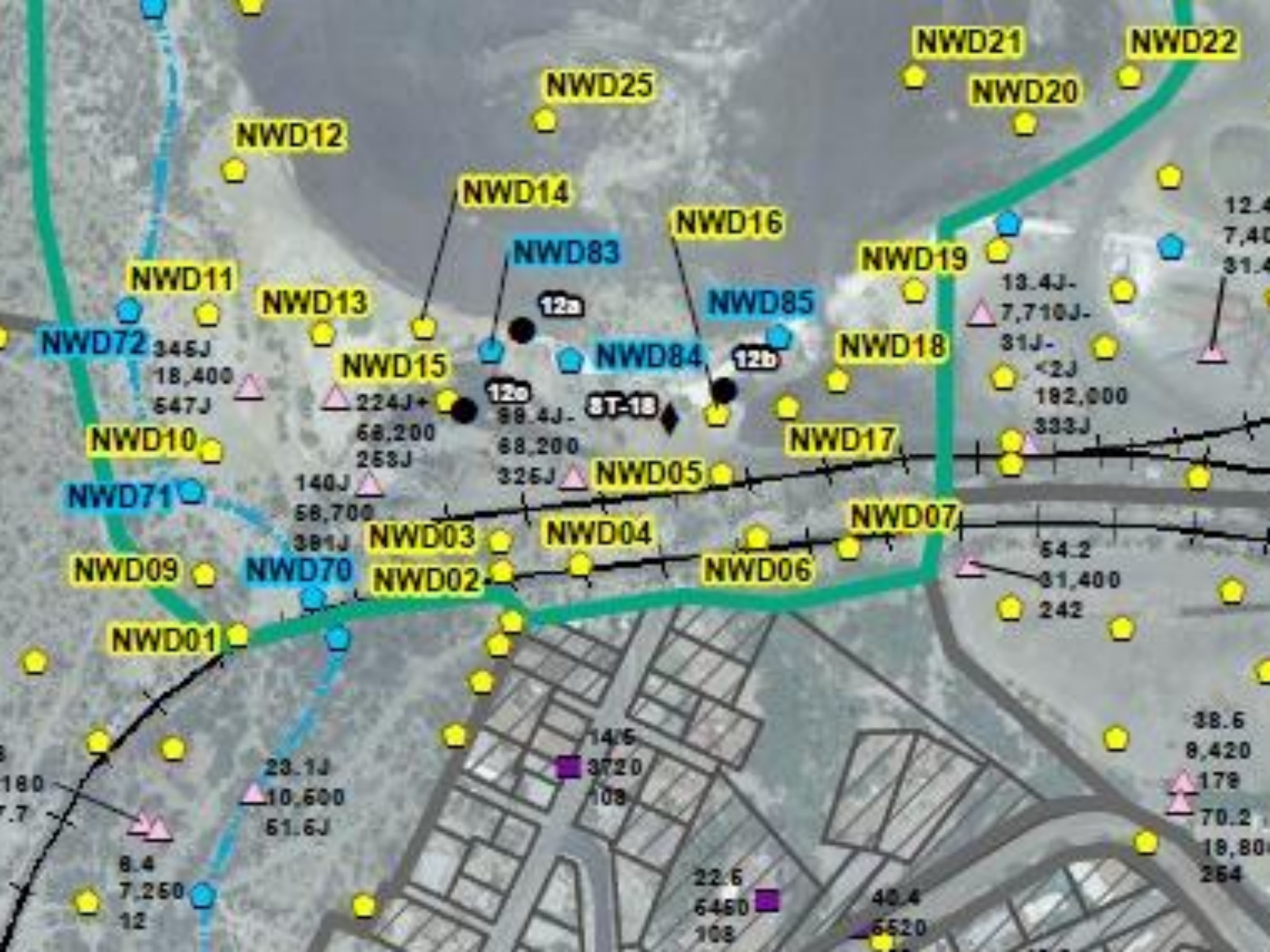
- EPA has found elevated concentrations of metals in neighborhoods.
- New investigation covers all non-residential areas
- Includes tailings piles in town and large piles next to the Gila River



Northern Waste Disposal





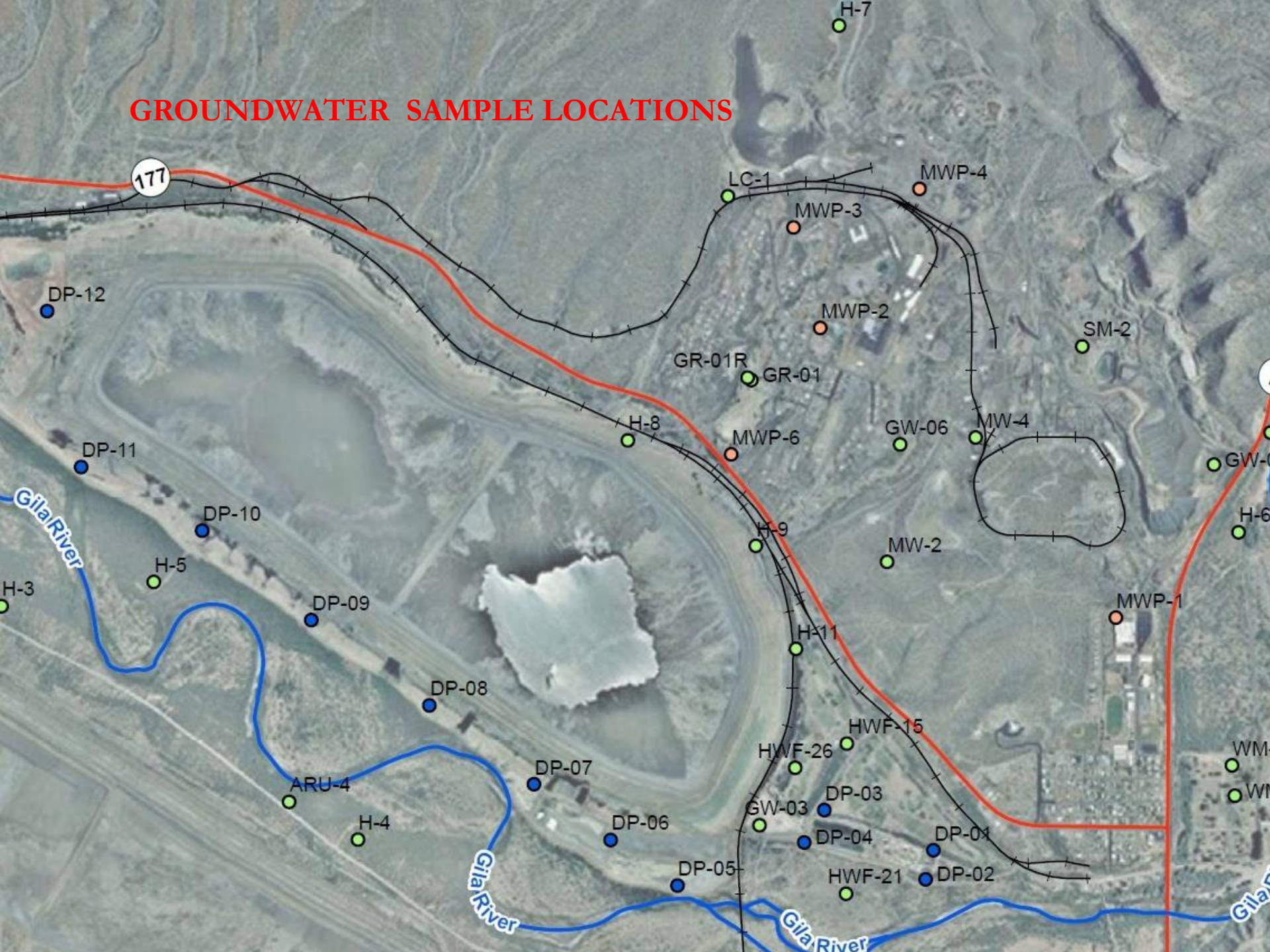


Remedial Investigation Groundwater

- EPA has found elevated concentrations of metals
- New Investigation sampling includes 36 wells (6 newly installed)
- Will look to define the existing contamination



GROUNDWATER SAMPLE LOCATIONS



Remedial Investigation

Surface water

- Sampling will assess the tailings impacts on the river.
- Will include continuous, high and low flow sampling.



Gila River surface water





Gila River surface water
Copper Standard = 40

Remedial Investigation

Stormwater

- Sampled for the first time this year.
- Will use automatic samplers placed in arroyo
- Will determine impacts to residents who may be exposed



SOIL SAMPLE LOCATIONS



Remedial Investigation Air

- EPA has found elevated concentrations of metals
 - Several years of monitoring (2006-present)
 - Air Monitor near Hayden city hall and on high school in Winkelman



Past Air Sampling Results

ug/m ³	Arsenic	Cadmium	Chromium	Lead
Air Standard*	.00045	.0011	.00016	0.15
Background	<.0004 (ND)	<.0006 (ND)	.00049	.0016
Average	.024	.005	.002	.085
Maximum	.189	.035	.007	0.8

Hayden air sampler

* EPA Region 9 Preliminary Remediation Goals

Past Air Sampling Results

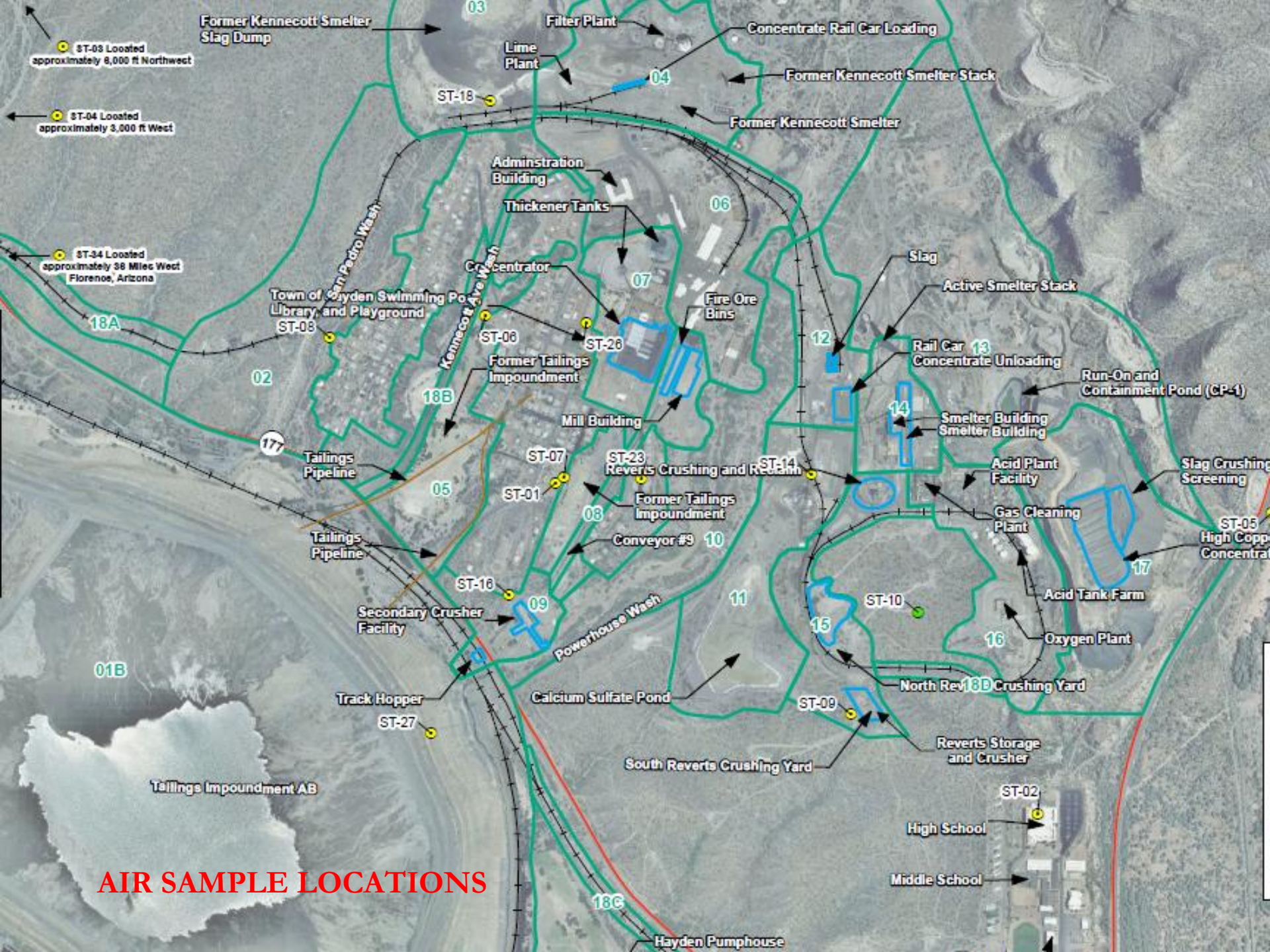
■ Patterns

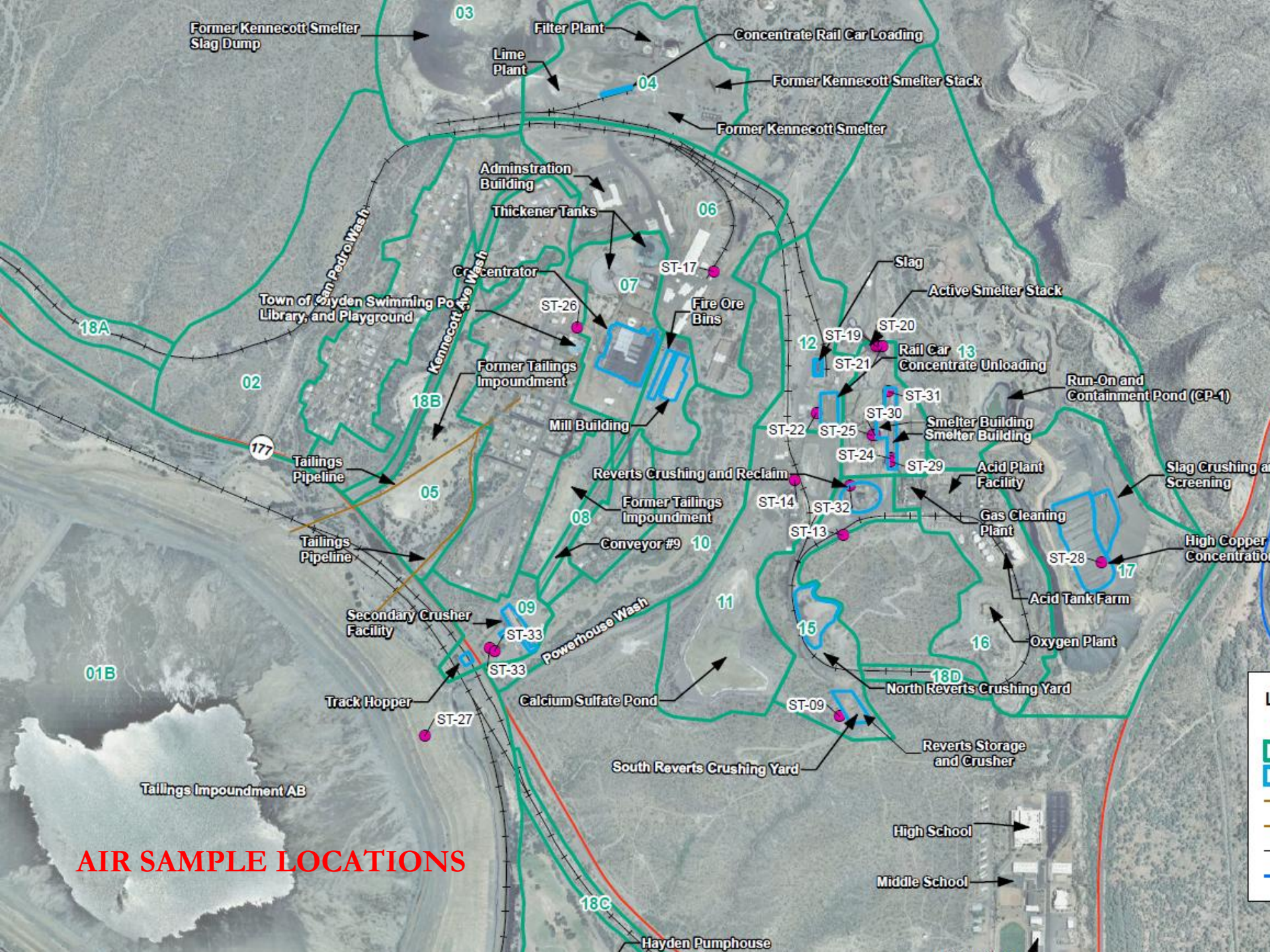
- Particulates are highest when wind is blowing from the large tailings pile and track hopper areas
- Highest levels of Arsenic, Lead and Cadmium occur when wind is blowing from smelter



Upcoming air sampling

- Ambient (in town)sampling at 13 locations
- Source sampling (on Asarco property)at up to 19 locations
- Metals and particulates in air
- “Fingerprinting” to determine sources and the effects in town
 - Sources include: flash furnace, converters, anode furnace, slag pours, tailings, concentrate, soil piles, roads, materials handling.
- Monitoring can last up to 2 or more years





Risk Assessment

■ Toxicity Assessment

■ Non Cancer

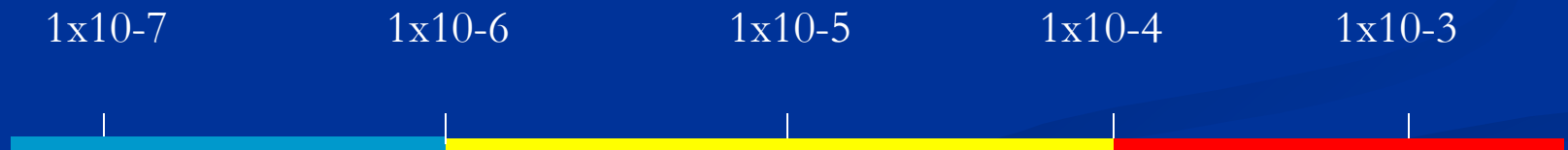
- Lead, copper, arsenic
- Hazard Index = Daily exposure without adverse effect
- Harm may occur above a certain dose

■ Cancer

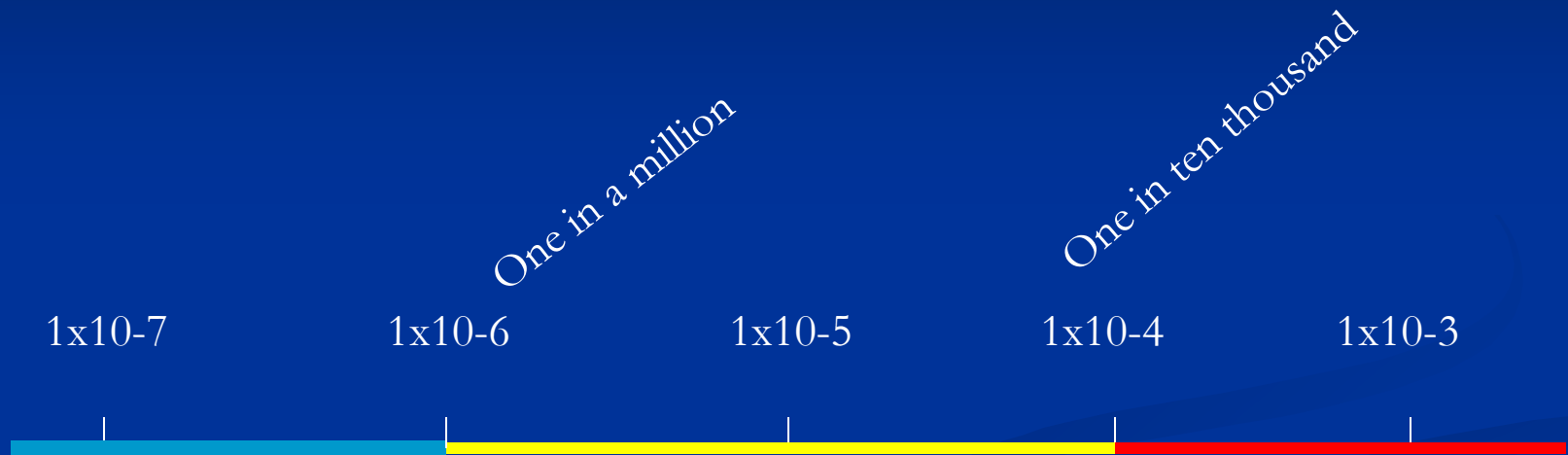
- Arsenic, cadmium and chromium
- Risk based
- Probability of getting cancer over a lifetime
- Risk can be managed

Risk Analysis

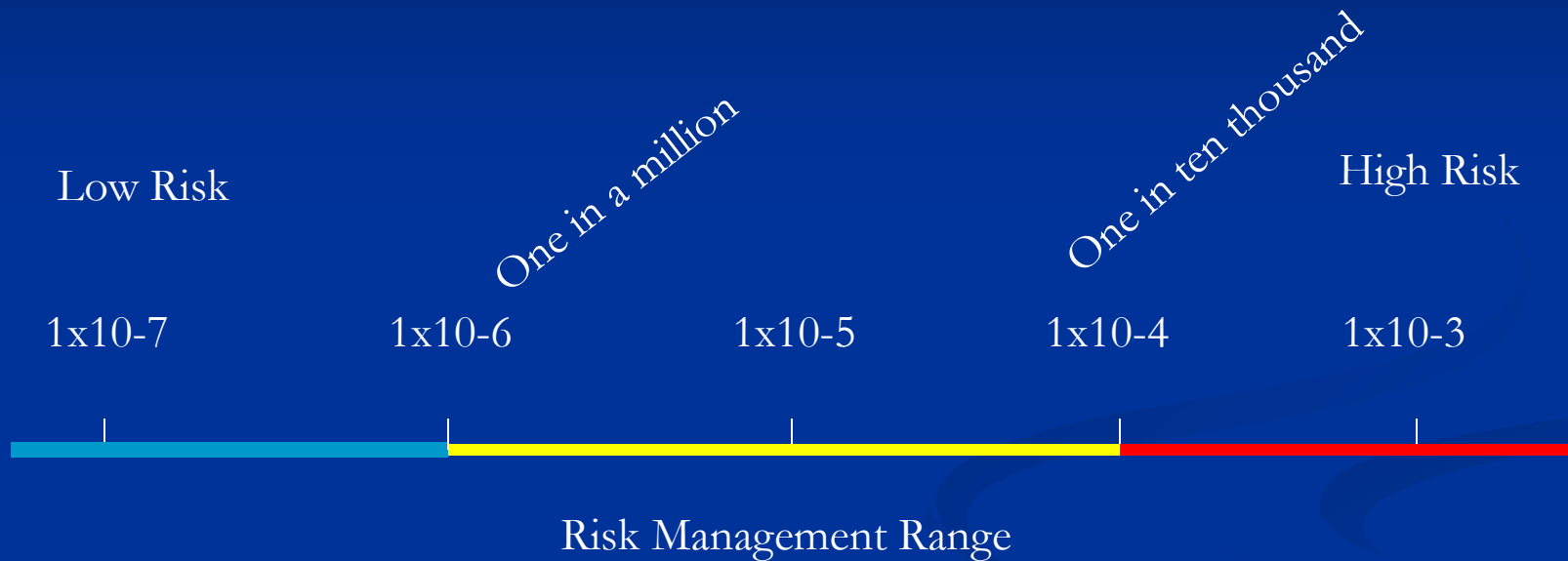
Cancer



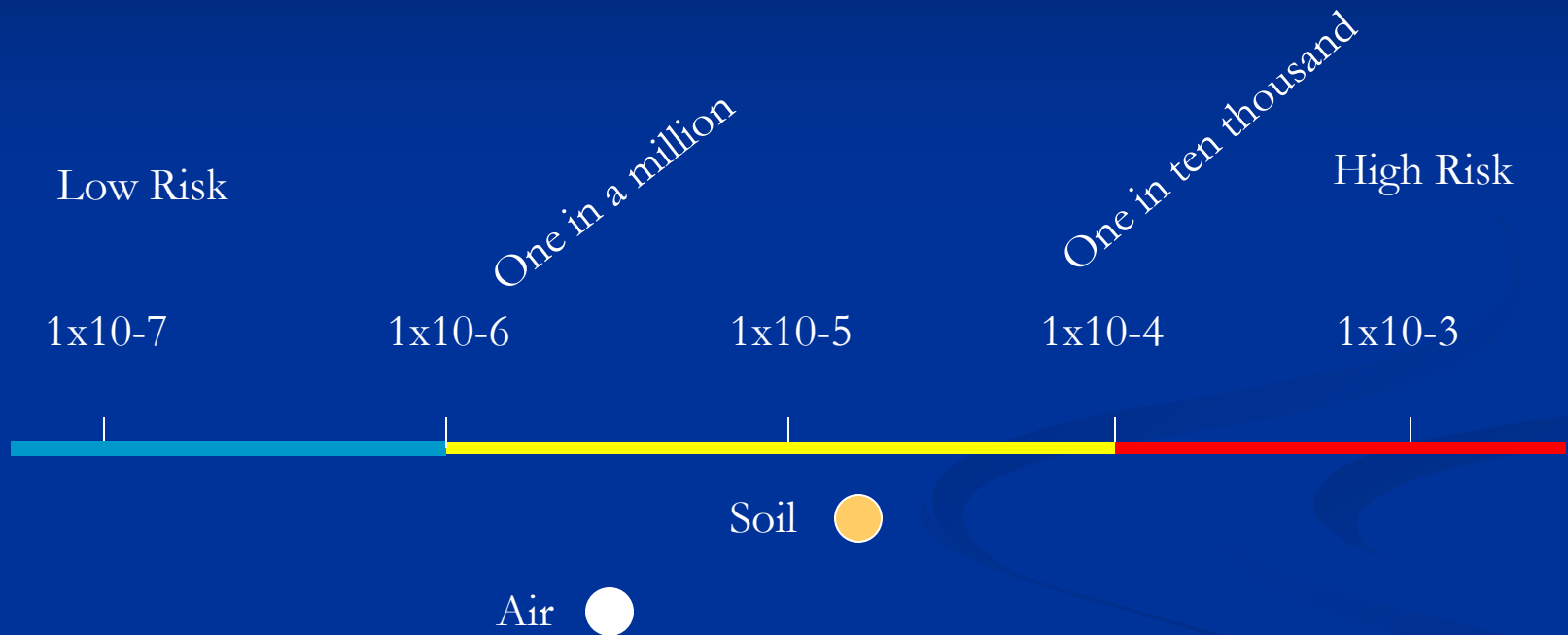
Risk Analysis Cancer



Risk Analysis Cancer

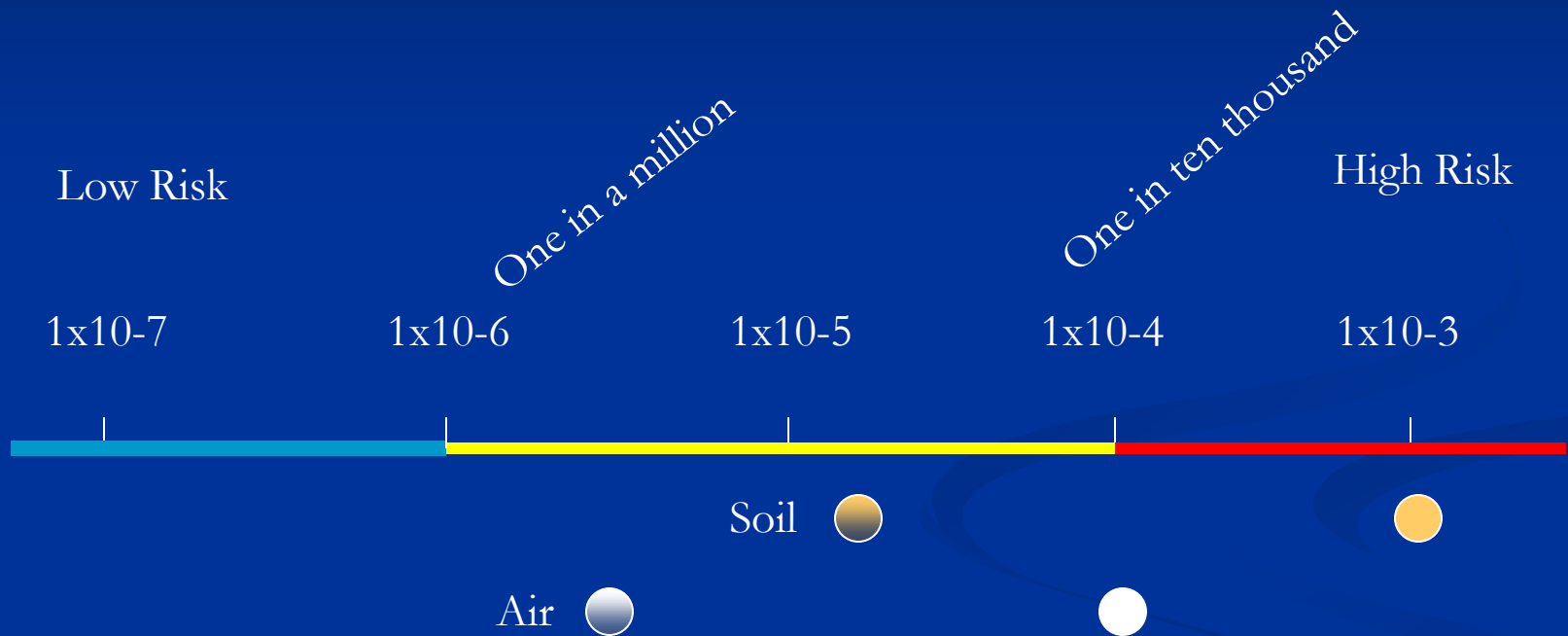


Risk Analysis Cancer



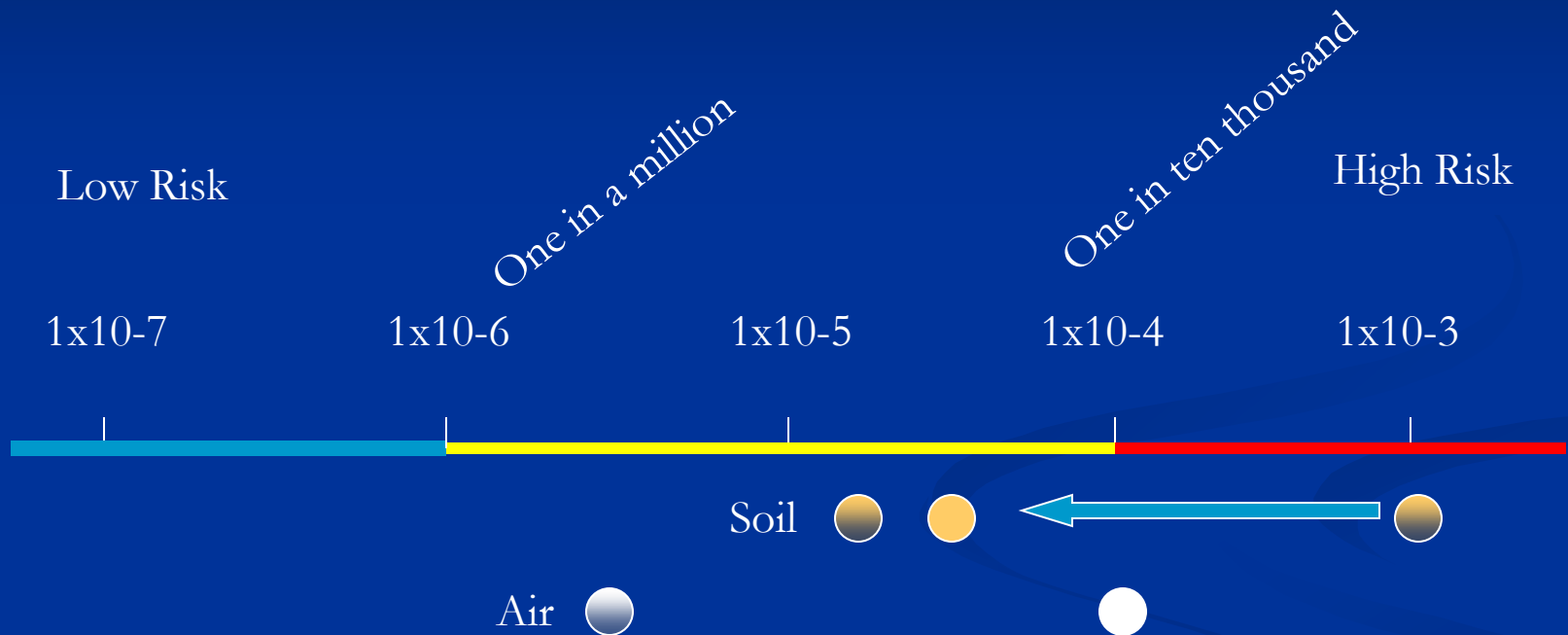
Background - Unaffected by Hayden Operations

Risk Analysis Cancer



Hayden

Risk Analysis Cancer



Hayden and Winkelman yard soil replacement

Clean Air Act Finding of Violation

- FOV issued by EPA on November 10, 2011
- FOV alleged that Asarco is in violation of Hazardous Air Pollutant (HAP) requirements at its smelter
- EPA's investigation of the alleged violations is ongoing

Air Regulatory Actions

■ Title V Permit

- Renewal permit to be proposed by Arizona Dept. of Environmental Quality

■ Ambient Air Quality

■ Particulate Matter & SO₂

- Hayden does not meet these health based standards
- ADEQ must develop plan to attain air quality standards at Hayden
- Must attain (ambient air) within 5 years of designation of nonattainment

■ Regional Haze

- Protects visibility at National Parks & wilderness areas
- Retrofit technology may be required at smelters, but uncertain at this point what will be required

Next Steps

- Complete soil investigations by end of summer.
- Cleanup worst soil areas, if needed.
- Continue surface water, groundwater and air investigations for next two years.
- Feasibility study to determine best ways to reduce risk in Hayden and Winkelman.
- Interim regulatory or superfund options can be used during or after the current Superfund investigation.

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